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ORIGINAL ARTICLE

Review of the genus *Camptochaeta* Hippa & Vilkamaa (Diptera: Sciaridae) from China

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Abstract The genus *Camptochaeta* from China is reviewed and seven species are recognized. *C. tumidula* Xu & Vilkamaa, **sp. nov.** is newly described and three species, *C. bournei* (Shaw, 1941), *C. consimilis* (Holmgren, 1869) and *C. subcamptochaeta* (Mohrig, 1992) are reported for the first time from China. A key and a distribution map of the Chinese species of *Camptochaeta* are provided.

Key words Diptera, Sciaridae, new species, new record, China.

1 Introduction

Camptochaeta was recognized as a distinct taxon by a unique putative synapomorphy, the attachment of the flexor muscle of the gonostylus, which is deeply notched towards the apex of the gonostylus (Hippa & Vilkamaa, 1994). Later, Menzel and Mohrig (2000) transferred the species without apical tooth of the gonostylus to their *Corynoptera parvula* group and to their *Corynoptera spinifera* group, regarding only the species with a robust apical tooth on the gonostylus as the true *Camptochaeta*. However, a good phylogenetic analysis is needed to suggest whether the species without the apical tooth belong to *Camptochaeta*, or whether they should be regarded as a different taxon or possibly separate taxa.

Here we follow the concept of Menzel and Mohrig (2000) in which *Camptochaeta* currently includes 52 species (Hippa & Vilkamaa, 1994; Menzel & Heller, 2004; Komarova, Hippa & Vilkamaa, 2007; Rudzinski, 2008; Vilkamaa, Hippa & Taylor, 2011; Heller, 2012; Vilkamaa, Hippa & Heller, 2013). The genus can be diagnosed by a combination of the following characteristics: maxillary palpus 3-segmented; wing membrane non-setose, wing veins C and R setose, M and CuA bare, bM bare; tibia 1 with a subapical prolateral patch of modified setae, proximally and laterally usually demarcated by an arched sclerotized crest; gonostylus with an apical tooth, one or more megasetae on the lateral (apical) and mesial side of the tooth, the mesial surface impressed, the basal margin on the mesial side deeply notched apical, with the dorsal margin of the notch being pushed more mesad than the ventral margin, thus usually giving a characteristic Y-shaped image in dorsal or ventral view (Hippa & Vilkamaa, 1994).

Three species of the genus have been recorded from China earlier, *Camptochaeta tenuipalpalis* (Mohrig & Antonova, 1978) from Sichuan and Zhejiang Provinces (Wu *et al*., 2008), *C. regenerata* Rudzinski, 2008 and *C. subspicigera* Rudzinski, 2008 from Taiwan (Rudzinski, 2008). In this study, we review the genus based on specimens collected from a series of localities in China. Detailed illustrations, differential diagnoses and distributional information of all the species are provided, as well as a key to the Chinese species.

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2 Materials and methods

The specimens were collected with sweep-net or Malaise traps and preserved in 75% ethanol. The specimens were mounted on microscope slides in Canada balsam after clearing in xylol, or in "Euparal" after dehydrating them in absolute ethanol. The preparations were made under a Nikon SMZ1500 stereo microscope. The specimens were observed, measured and illustrated under a Leica DM2500 microscope. The study is based on males only, because all the species concepts in *Camptochaeta* are based on the male morphology, whereas females are not generally identifiable to species level. All specimens were deposited at the Institute of Forest Protection, Zhejiang A & F University, Hangzhou, Zhejiang Province, China (ZAFU).

3 Taxonomy

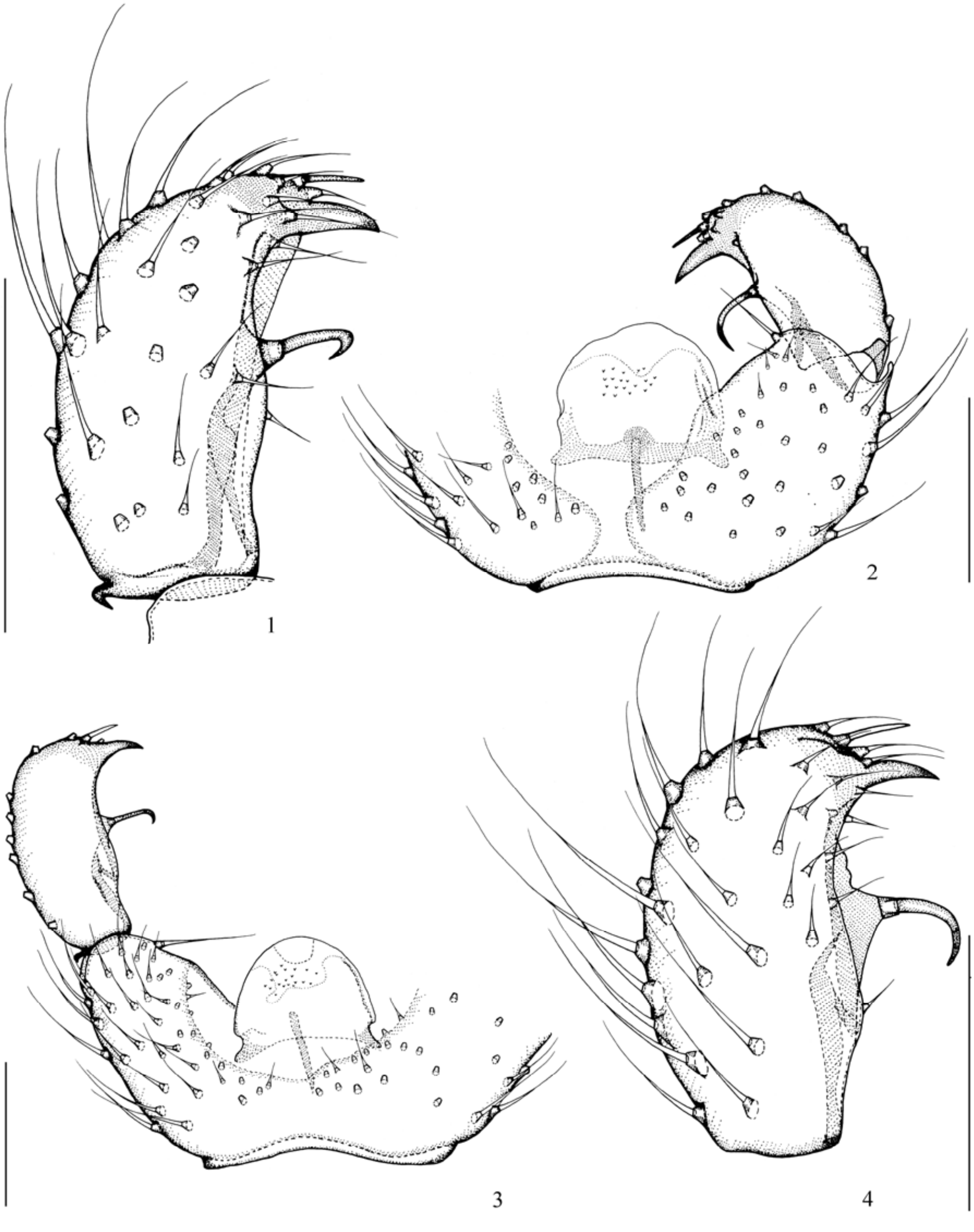
Key to the species of *Camptochaeta* from China (males).

1. Gonostylus with one mesial megaseta (Figs 1, 3, 9) 2
   Gonostylus with two mesial megasetae (Figs 14, 19, 23, 30) 4
2. Gonostylus with one apical megaseta, mesial megaseta on apical half of gonostylus (Fig. 1) .... ***C. tenuipalpalis* (Mohrig & Antonova, 1978)**
   Gonostylus with two apical megasetae (Fig. 9) 3
3. Apical megasetae below apical tooth, mesial megaseta curved and located at middle of gonostylus .... ***C. regenerata* Rudzinski, 2008**
   Apical megasetae at sides of apical tooth, mesial megaseta almost straight and located at the apical third of gonostylus (Figs 8–12) .... ***C. subspicigera* Rudzinski, 2008**
4. Two mesial megasetae of gonostylus located wide apart, the distance between them about one third as long as length of gonostylus, basalmost mesial magaseta arising from a very large basal body (Fig. 14) .... ***C. bournei* (Shaw, 1941)**
   Two mesial megasetae of gonostylus located very closely or partly overlapping, the basalmost mesial magasetae without a large basal body (Figs 19, 23, 30) 5
5. Gonostylus slender and strongly narrowed subapically, with an apical tooth modified, its mesial margin smoothly sigmoid (Figs 18–19) .... ***C. consimilis* (Holmgren, 1869)**
   Gonostylus tumid or slightly tumid, with an apical tooth simple, its mesial margin evenly curved (Figs 23, 25, 30) 6
6. Gonostylus with two apical megasetae, located at apex of gonostylus; tegmen evenly curved (Figs 23, 25) .... ***C. subcamptochaeta* (Mohrig, 1992)**
   Gonostylus with three apical megasetae, the dorsal one rather robust and arising from a large basal body on dorsal side of the apical tooth, and the other two located at apex of gonostylus; tegmen abruptly narrowed subapically (Fig. 30) .... ***C. tumidula* Xu & Vilkamaa, sp. nov.**

***Camptochaeta tenuipalpalis* (Mohrig & Antonova, 1978)** (Figs 1–7, 36)

Corynoptera tenuipalpalis Mohrig & Antonova, 1978: 546.
Camptochaeta tenuipalpais Hippa & Vilkamaa, 1994: 48 (subsequent misspelling).

Material examined. China, Inner Mongolia. 1 male, Tongliao, Daqinggou Nature Reserve, Xiaoqinghu (42°46.760'N, 122°15.309'E; elev. 249 m), 19 July 2013, leg. Jun Xu & Mei Qin (SM01961); 1 male, Chifeng, Saihanwula Nature Reserve, Zhenggou (44°13.198'N, 118°44.177'E; elev. 1 231 m), 23 July 2013, leg. Kai Shi (SM01960). Zhejiang Province. 3 males, Lin'an, Mt. Xijingshan (30.3°N, 119.7°E), 22 November 2008, leg. Su-Jiong Zhang (SM00074-00075, SM00091); 1 male, the same data but 21 November 2008 (SM00044); 1 male, Mt. Tianmu (30.2°N, 119.8°E), 18 December 2008, leg. Xiao-Ling Niu, Malaise trap (SM00332); 1 male, Lishui, Suichang, Jiulongshan Nature Reserve, Huangtanyu (28.4°N, 118.9°E), 10 October 2008, leg. Su-Jiong Zhang (SM00106); 1 male, Taishun, Wuyanling (27.7°N, 119.7°E), 4 October 2006, leg. Jin-Hua Xu (SM02472). Fujian Province. 2 males, Wuyishan, Xingcun, Tongmu, Sangang (27°44.86'N, 117°40.98'E), 3 May 2014, leg. Jun Xu (SM02130-02131); 2 males, Jianyang, Huangkeng, Dazhulan (27°43.50'N, 117°39.60'E), 3 May 2014, leg. Jun Xu (SM02185, SM02187); 1 male, Jiangle, Mt. Longqi, Kengwei (26°30.67'N, 117°17.43'E), 15 August 2012, leg. Kai Shi (SM2028). Sichuan Province. 1 male, Emeishan, Mt. Emei, Leidongping (29.5°N, 103.3°E; elev. 2 300 m), 2 September 2012, leg. Xuan-Kun Li (SM01991); 1 male, Ya'an, Lamahe (30.1°N, 102.4°E; elev. 1 200 m), 16 July 2006, leg. Xiao-Lin Niu (SM02469); 1 male, Ya’an, Bifengxia (elev. 800 m), 17 July 2006, leg. Zhuan Lu (SM02470); 1 male, Wenchuan, Wolong Nature Reserve (31.0°N, 103.2°E; elev. 2 000 m), 22 July 2006, Zhuan Lu (SM02471). Yunnan Province. 1 male, Tengchong, Jietou, Shaba, Mt. Tiantai (25°24.254'N, 98°42.735'E; elev. 2 142 m), 13 May 2009, leg. Su-Jiong Zhang (SM00881). Tibet. 1 male, Motuo, Zhamo road, K18 (29°44'19"N, 95°40'41"E; elev. 3 286 m), 21 July 2014, leg. Jun Xu (SM02525). Shaanxi Province. 1 male, Ningshan, Xunyangba (33°33.1603'N,



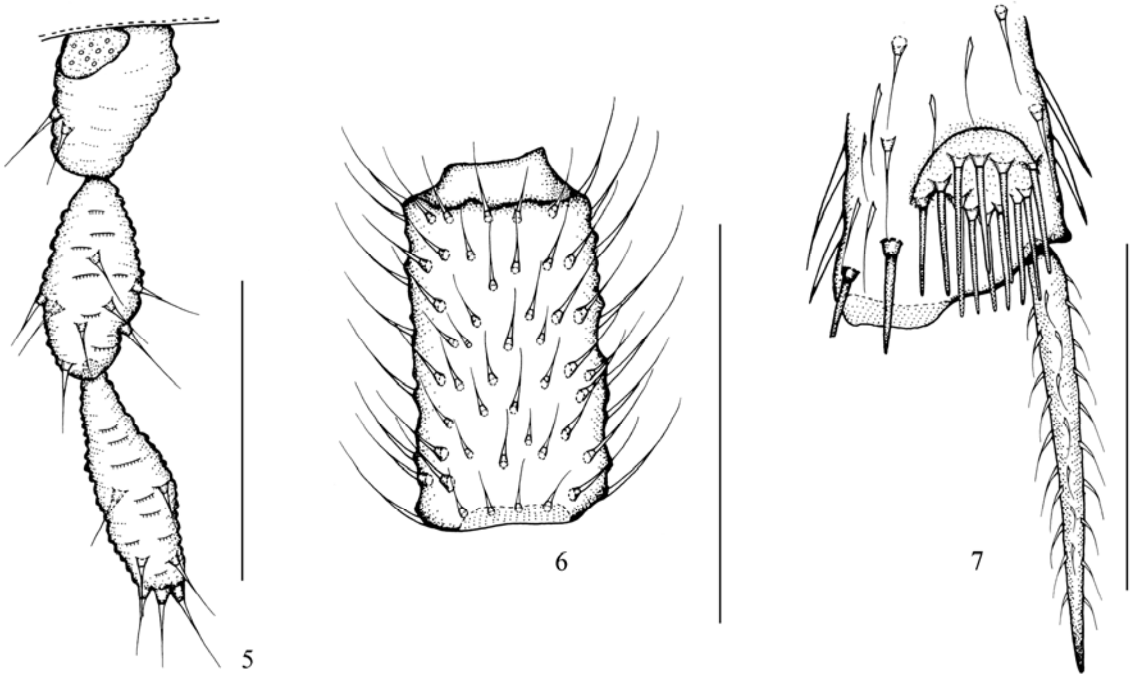
Figs 1–4. *Camptochaeta tenuipalpalis* (Mohrig & Antonova, 1978), male. 1. Left gonostylus, ventral view, from Inner Mongolia. 2. Part of hypopygium, ventral view, from Inner Mongolia. 3. Part of hypopygium, ventral view, from Shaanxi. 4. Right gonostylus, dorsal view, from Shaanxi. Scale bars = 0.10 mm.

108°32.737'E; elev. 1 325 m), 12 August 2013, leg. Jun Xu (SM01925); 3 males, Ningshan, Niujiliang Nature Reserve, Gangou (33°49.553'N, 108°47.240'E; elev. 1 778 m), 10 August 2013, leg. Jun Xu (SM01912-01913, SM01915); 1 male, Ningshan, Pingheliang Nature Reserve (33°28.749'N, 108°29.509'E; elev. 2 388 m), 13 August 2013, leg. Jun Xu (SM01904); 1 male, Ningshan, Huoditang Forestry Farm, 18 June 1985, leg. Chikun Yang (SM02008). 1 male, Fengxian, Huangniupu, Dongheqiao (34°14.788'N, 106°57.292'E; elev. 1 516 m), 22 August 2013, leg. Jun Xu (SM01907).

Diagnosis. *Camptochaeta tenuipalpalis* is very similar to *C. uncifera* Hippa & Vilkamaa, 1994 by having only one apical megaseta and one curved mesial megaseta on the gonostylus. They differ in *C. tenuipalpalis* having the apex of the gonostylus narrowed, whereas it is broad and plump in *C. uncifera*.

Distribution. China (Inner Mongolia, Zhejiang, Fujian, Sichuan, Yunnan, Tibet, Shaanxi, Taiwan; Fig. 36), Japan, Russia (Kundur-Khabarovsk, Primorsky Krai), Finland (Kuusamo), Sweden.

Remarks. This species was first recorded from the Khabarovsk region, Russian Far East. Hippa and Vilkamaa (1994) redescribed the species based on Finnish materials, which show slightly broader gonostylus and less pointed apical tooth than the type material. We have found no distinct differences between the Chinese and North European materials. However, the Chinese specimens show are slightly variable in the shape of the apex of the gonostylus and in the direction of mesial megaseta, the two Shaanxi specimens (SM01904, SM02008) having their apex of gonostylus more plump, whereas one Zhejiang specimen (SM00332) and one Shaanxi specimen (SM01997) have their mesial megaseta of the gonostylus less curved.



Figs 5–7. *Camptochaeta tenuipalpalis* (Mohrig & Antonova, 1978), male. 5. Palpus, lateral view. 6. 4th flagellomere, lateral view. 7. Apex of foretibia, prolateral view. Scale bars = 0.10 mm.

Camptochaeta regenerata **Rudzinski, 2008**

Camptochaeta regenerata Rudzinski, 2008: 322.

Diagnosis. The species is related to *Camptochaeta tenuipalpalis* (Mohrig & Antonova, 1978) and *C. uncifera* Hippa & Vilkamaa, 1994 by having one curved mesial megaseta on the gonostylus. But it differs in having two approximately equally long apical megasetae located near the apical tooth, and in having the tegmen with a middorsal ridge which is produced as a finger-like process in *C. regenerata*, whereas in *C. tenuipalpalis* and *C. uncifera* at least one apical megaseta is placed at apex of the gonostylus and the tegmen is unmodified.

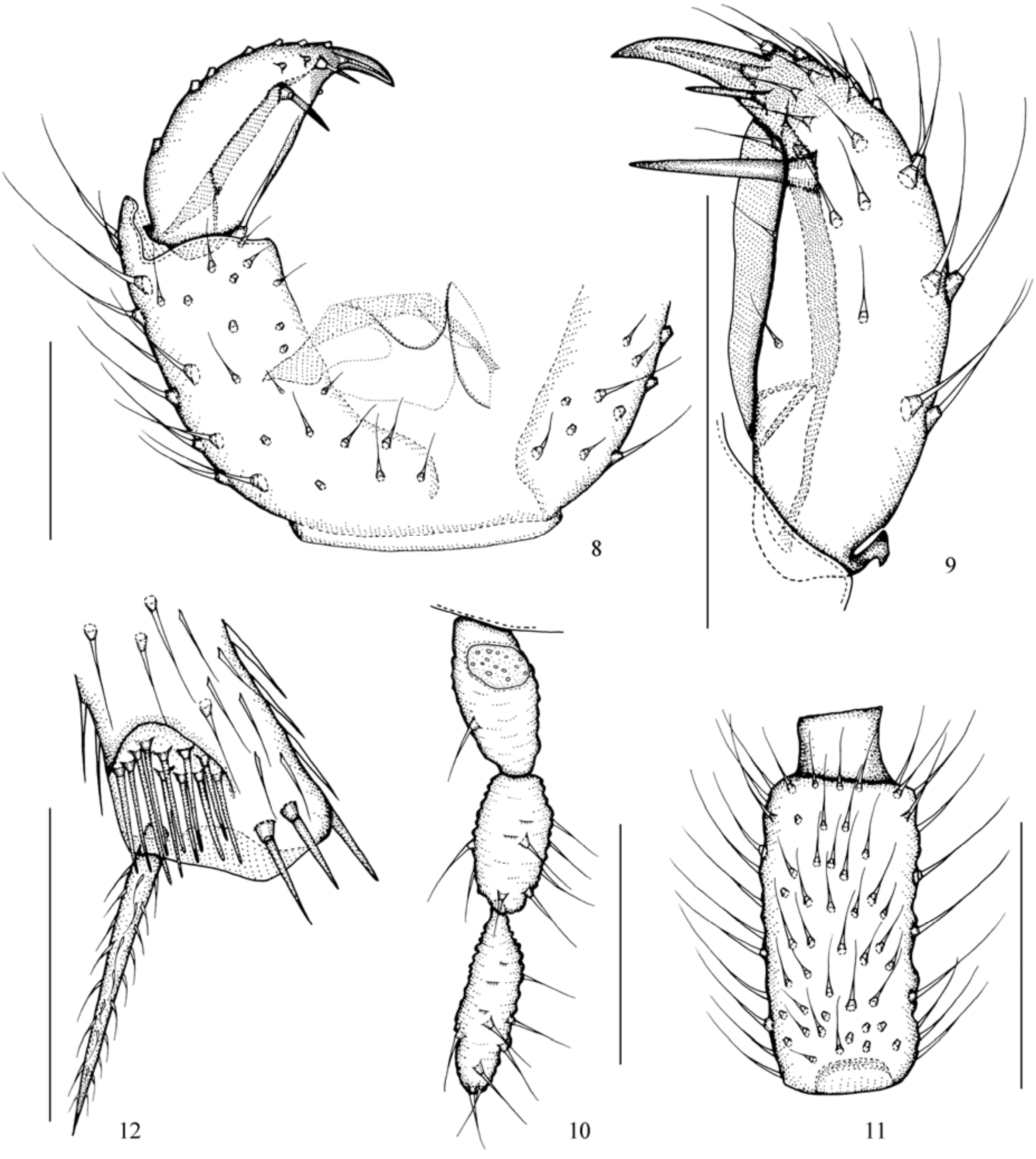
Distribution. China (Taiwan; Fig. 36).

Camptochaeta subspicigera **Rudzinski, 2008** (Figs 8–12, 34, 36)

Camptochaeta subspicigera Rudzinski, 2008: 323.

Material examined. China, Inner Mongolia. 1 male, Tongliao, Ganqika, Daqinggou Nature Reserve, Xiaoqinghu (42° 46.760'N, 122°15.309'E; elev. 249 m), 20 July 2013, leg. Jun Xu (SM01953).

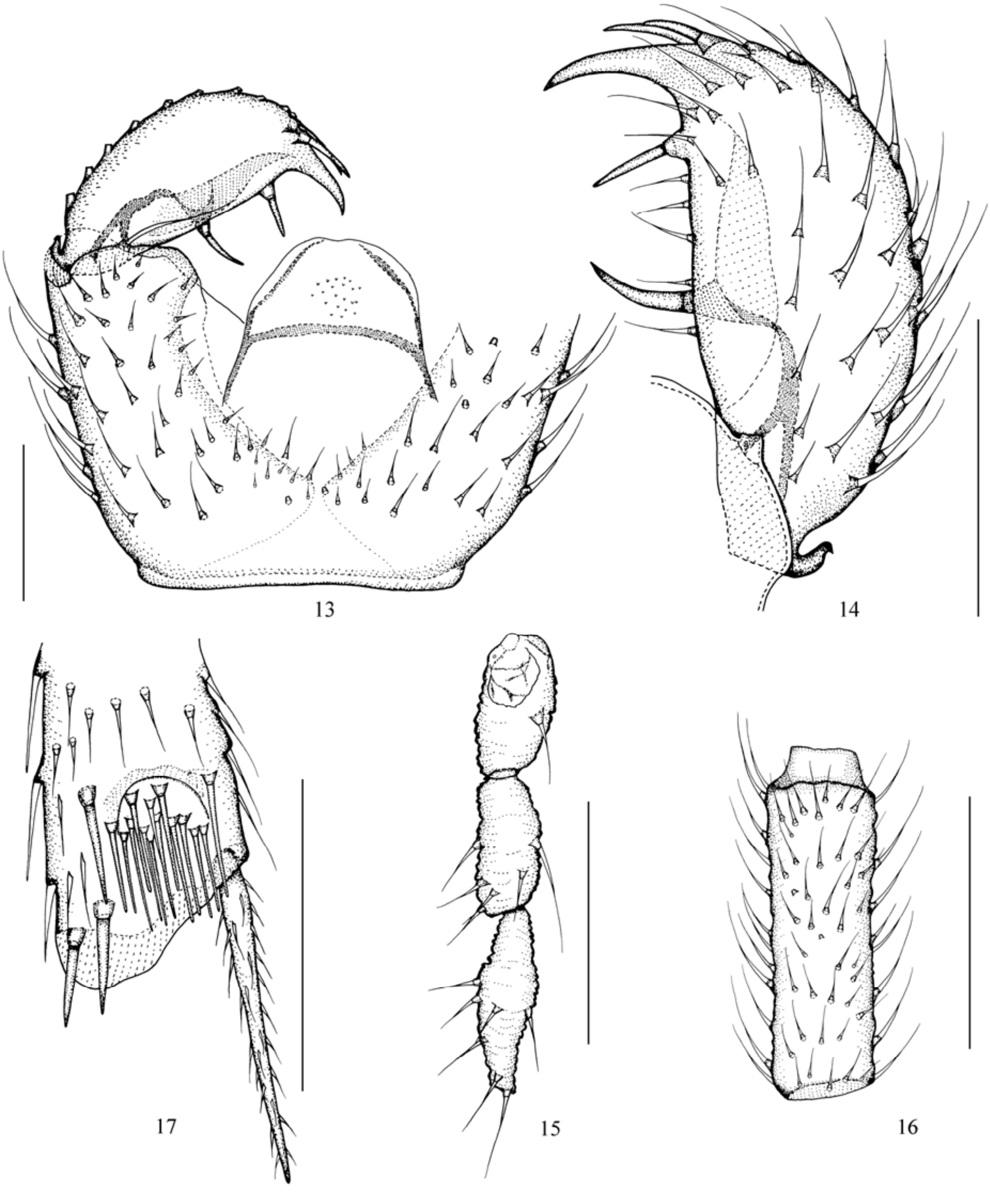
Diagnosis. *Camptochaeta subspicigera* resembles somewhat *C. fallax* Hippa & Vilkamaa, 1994, *C. scanica* Hippa & Vilkamaa, 1994 and *C. sicilicula* Hippa & Vilkamaa, 1994 by having a slender gonostylus and the parameres of the tegmen sclerotized. These species can be distinguished by the number and location of their megasetae on the gonostylus, *Camptochaeta subspicigera* differs from the other species mentioned in having the mesial megaseta in a more apical position in the gonostylus, and in having the apical megasetae on the dorsal and ventral sides of the apical tooth, not on its apical side.



Figs 8–12. *Camptochaeta subspicigera* Rudzinski, 2008, male. 8. Part of hypopygium, ventral view. 9. Right gonostylus, ventral view. 10. Palpus, lateral view. 11. 4th flagellomere, lateral view. 12. Apex of foretibia, prolateral view. Scale bars = 0.10 mm.

Distribution. China (Inner Mongolia, Taiwan; Figs 8–12, 36).

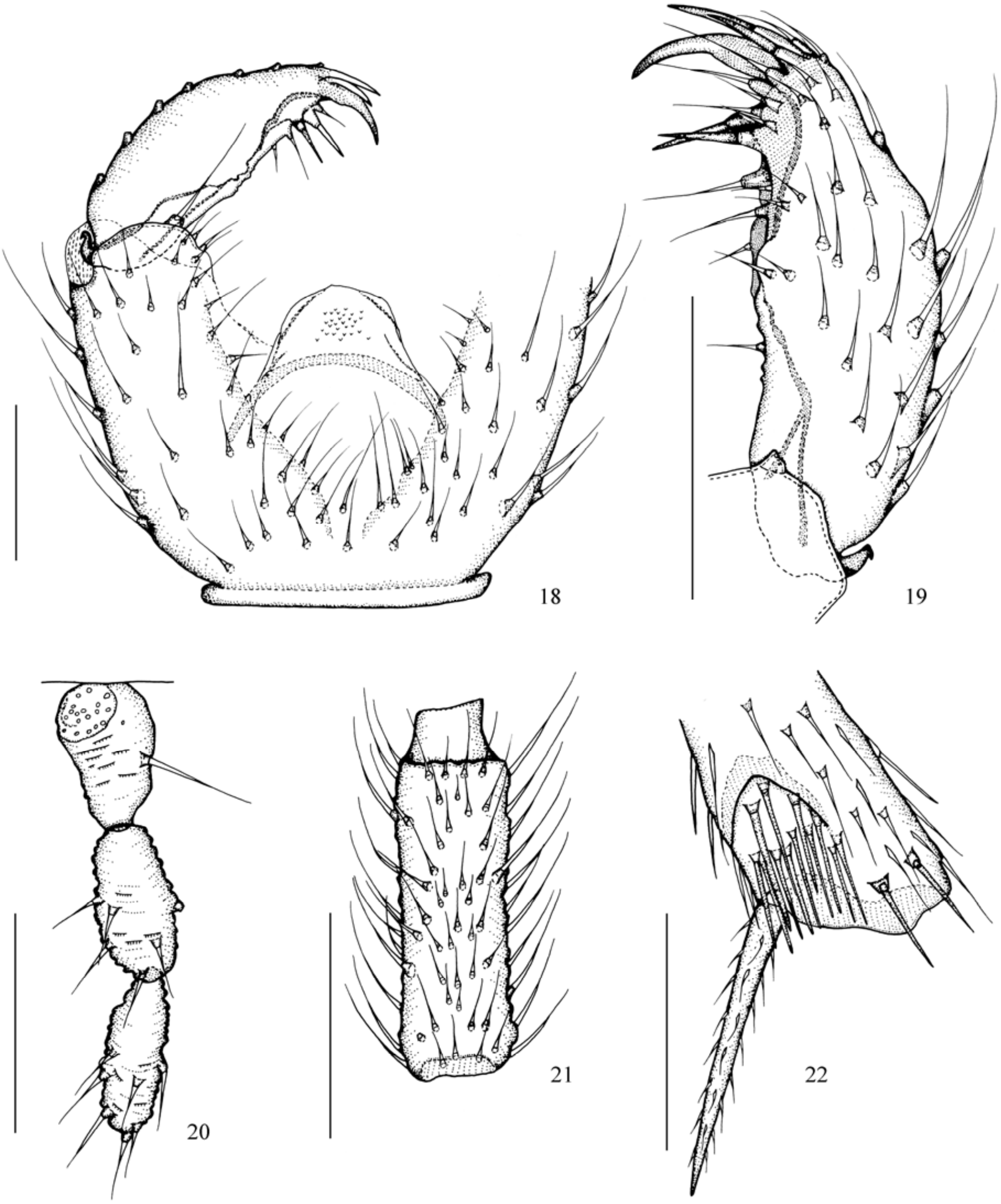
Remarks. The Mongolian specimen differs from the Taiwanese type specimen illustrated by Rudzinski (2008) in having the mesial megaseta even stronger than the apical ones which seem to be slightly larger in the type specimen than in the Mongolian one. Furthermore, the mesial megaseta is weakly curved, not straight, in the type specimen, although this may depend on the preparation. Anyway, it is not excluded that there is two distinct taxa.



Figs 13–17. *Camptochaeta bournei* (Shaw, 1941), male. 13. Part of hypopygium, ventral view. 14. Right gonostylus, ventral view. 15. Palpus, lateral view. 16. 4th flagellomere, lateral view. 17. Apex of foretibia, prolateral view. Scale bars = 0.10 mm.

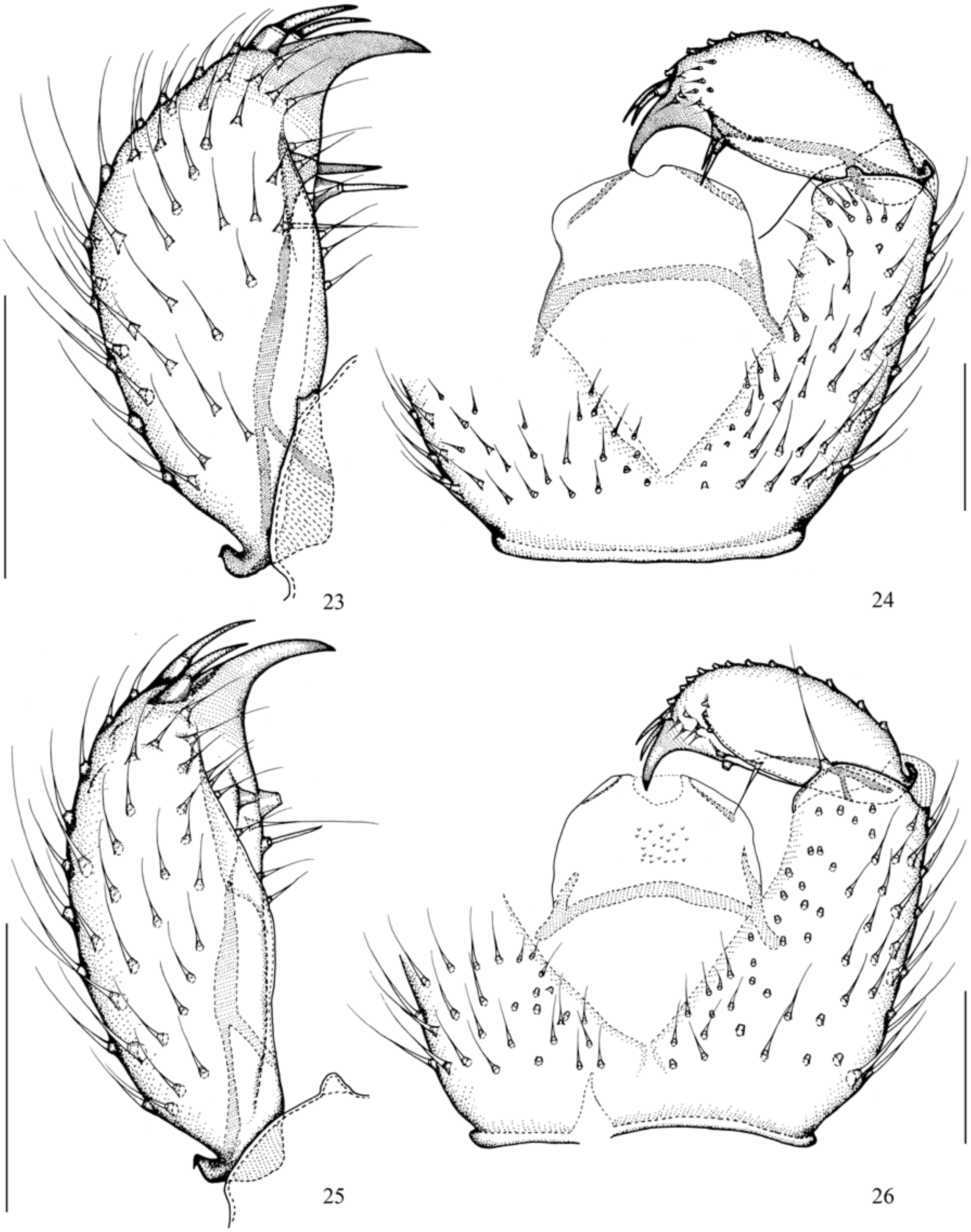
Camptochaeta bournei **(Shaw, 1941) New record to China** (Figs 13–17, 36)

Sciara (Neosciara) bournei Shaw, 1941: 175.
Bradysia bournei; Stone & Laffoon, 1965: 232.
Corynoptera bournei; Steffan, 1966: 52.
Corynoptera subvivax Mohrig, 1985: 233.
Camptochaeta bournei; Hippa & Vilkamaa, 1994: 27.



Figs 18–22. *Camptochaeta consimilis* (Holmgren, 1869), male. 18. Part of hypopygium, ventral view. 19. Right gonostylus, ventral view. 20. Palpus, lateral view. 21. 4th flagellomere, lateral view. 22. Apex of foretibia, prolateral view. Scale bars = 0.10 mm.

Material examined. China, Inner Mongolia. 2 males, Tumd Right Banner, Jiufengshan Nature Reserve, Toudaogou (40°42.164'N, 110°44.700'E; elev. 1581 m), 5 August 2013, leg. Mei Qin (SM01996–01997); 1 male, the same data but leg. Jun Xu (SM02006); 1 male, the same data but 4 August 2013, leg. Lan Ye (SM01948).



Figs 23–26. *Camptochaeta subcamptochaeta* (Mohrig, 1992), male, from Helanshan Nature Reserve, Inner Mongolia. 23, 25. Left gonostylus, ventral view. 24, 26. Part of hypopygium, ventral view. 23–24. From Zhaobi, Shangou. 25–26. From Shuimogou, Hougou, the specimen has most of the megasetae broken. Scale bars = 0.10 mm.

Diagnosis. *Camptochaeta bournei* is rather similar to *C. camptochaeta* (Tuomikoski, 1960) by sharing a rather tumid gonostylus with a similar pattern of megasetae (Hippa & Vilkamaa, 1994). It differs in having two apical measetae equal in size, the apical mesial megaseta attached on the ventral mesial margin of the gonostylus, the basal mesial megaseta with a large basal body, and the apex of the foretibia with a narrow patch of modified setae, whereas the dorsal apical megaseta is more robust than the ventral one, the apical mesial megaseta is located dorsally, the basal mesial megaseta has a normal basal body, and the apex of the foretibia has a broader patch of modified setae in *C. camptochaeta*.

Distribution. China (Inner Mongolia; Fig. 36), Finland (Utsjoki), USA (Massachusetts), Austria (Carinthia), Norway (Persfjord), Canada (Yukon, Quebec, Manitoba), Bulgaria, Sweden.

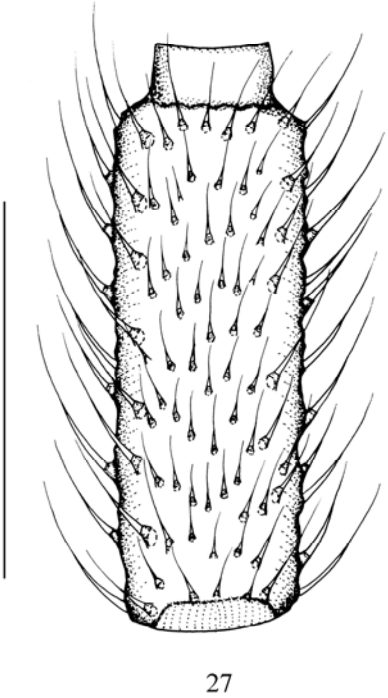
Remarks. This species was first described from Manitoba, Canada (Shaw, 1941), and is new to China here. We have found no distinct differences between the Chinese and Finnish materials.

***Camptochaeta consimilis* (Holmgren, 1869) New record to China** (Figs 18–22, 36)

Sciara consimilis Holmgren, 1869: 54.
Lycoriella consimilis; Steffan, 1966: 52.
Corynoptera consimilis; Tuomikoski, 1967: 46.
Camptochaeta consimilis; Hippa & Vilkamaa, 1994: 12.

Material examined. China, Inner Mongolia. 1 male, Alxa Left Banner, Helanshan Nature Reserve, Halawu (38°50.735'N, 105°50.851'E; elev. 2 200 m), 28 July 2013, leg. Mei Qin (SM01999).

Diagnosis. *Camptochaeta consimilis* resembles *C. longicosta* Hippa & Vilkamaa, 1994 by its slender gonostylus which is more than 2.5 times as long as wide. It can be distinguished from all the other *Camptochaeta* species by a unique character on its modified apical tooth which has the mesial margin smoothly sigmoid. In addition, *Camptochaeta consimilis* has a broad and truncate tegmen and the two mesial megasetaeare parallel, whereas *C. longicosta* has a narrow apical projection in its tegmen, and its two mesial megasetae are divergent.



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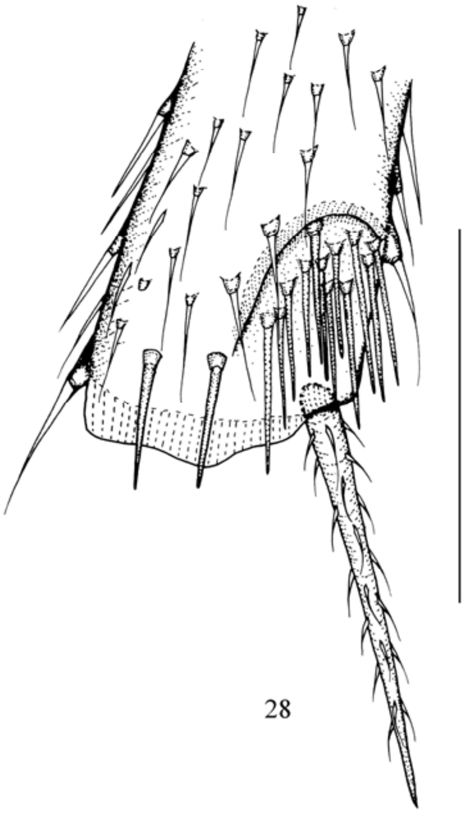

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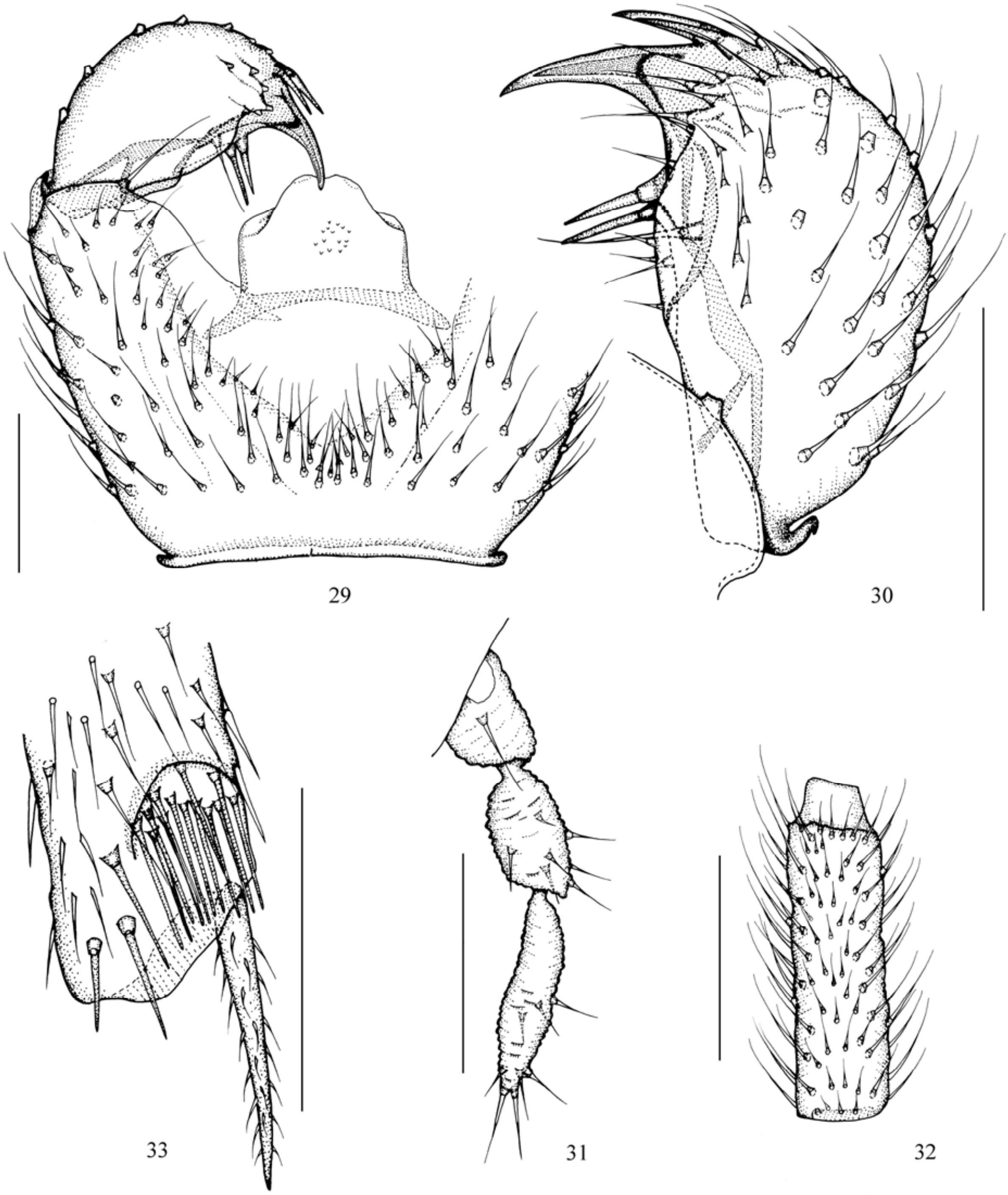
Figs 27–28. *Camptochaeta subcamptochaeta* (Mohrig, 1992), male, from Zhaobi, Shangou, Helanshan Nature Reserve, Inner Mongolia. 27. 4th flagellomere, lateral view. 28. Apex of foretibia, prolateral view. Scale bars = 0.10 mm.

Distribution. China (Inner Mongolia; Fig. 36), Norway (Spitzbergen, Finnmark), Finland (Kilpisjärvi), Russia (Altaisky Kray), Canada (Ellesmere), Great Britain (Wales).

Remarks. This species was redescribed by Hippa and Vilkamaa (1994) with lectotype designation. The species has a circumpolar and montane distribution.



Figs 29–33. *Camptochaeta tumidula* Xu & Vilkamaa, **sp. nov.**, male, holotype. 29. Part of hypopygium, ventral view. 30. Left gonostylus, ventral view. 31. Palpus, lateral view. 32. 4th flagellomere, lateral view. 33. Apex of foretibia, prolateral view. Scale bars = 0.10 mm.

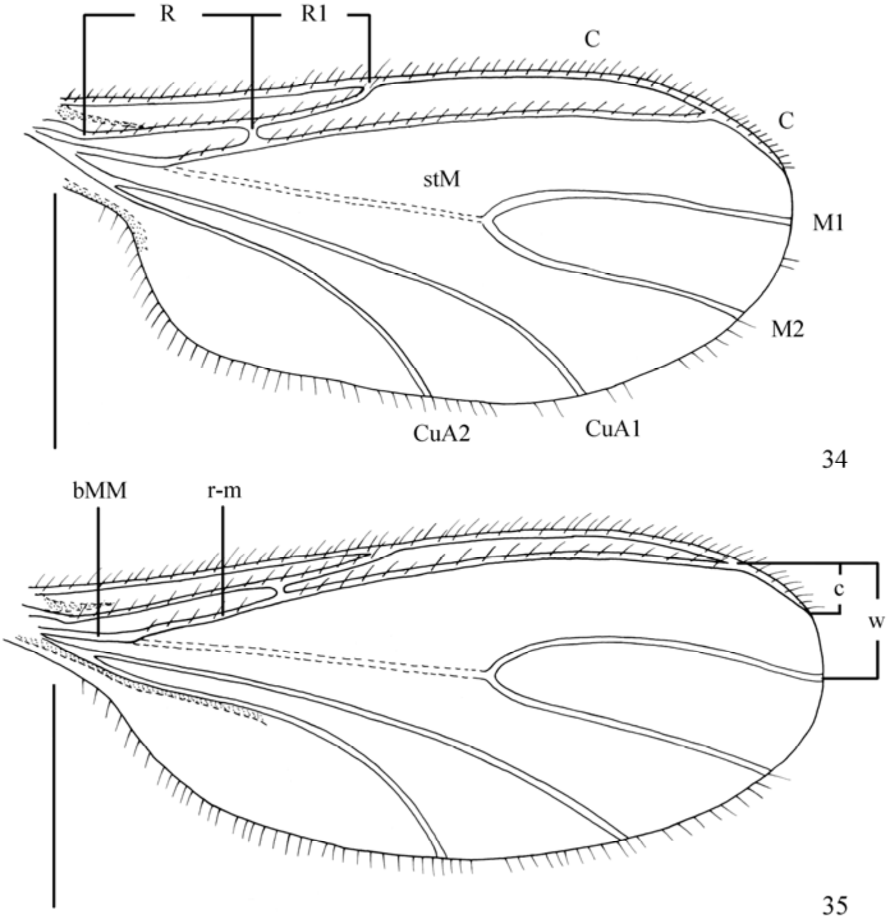
Camptochaeta subcamptochaeta **(Mohrig, 1992) New record to China** (Figs 23–28, 36)
Corynoptera subcamptochaeta Mohrig, *In*: Mohrig & Eckert, 1992: 295.
Camptochaeta subcamptochaeta: Hippa & Vilkamaa, 1994: 17.
Camptochaeta pentacantha Komarova, Hippa & Vilkamaa, 2007: 7; Vilkamaa, Hippa & Heller, 2013: 487 (synonymized).

Material examined. China, Inner Mongolia. 1 male, Alxa Left Banner, Helanshan Nature Reserve, Zhaobi, Shangou (elev. 2 700 m), 12 August 2012, leg. Yan Yan (SM01995); 1 male, Shuimogou, Hougou, 13 August 2011, leg. Ze Li (SM01992).

Diagnosis. *Camptochaeta subcamptochaeta* resembles *C. flagellifera* Hippa & Vilkamaa, 1994 in having a slender gonostylus with two mesial megasetae close to each other in the apical fourth of the gonostylus. *Camptochaeta subcamptochaeta* can be distinguished by having its tegmen simple, whereas *C. flagellifera* has this part strongly modified (Figs 23, 25 and Fig. 6 in Hippa & Vilkamaa, 1994). Furthermore, *C. flagellifera* has its gonostylus broader and with two or three elongated mesial setae (one in *C. subcamptochaeta*).

Distribution. China (Inner Mongolia; Fig. 36), Russia (Altay), Germany (Harz).

Remarks. This species was described from Germany and new to China here. In the original illustration the gonostylus has three apical megasetae (Mohrig & Eckert, 1992), while the specimens of *C. pentacantha* Komarova, Hippa & Vilkamaa, 2007, synonymized by Vilkamaa *et al.* (2013), have two apical megasetae as does our Helanshan material. In addition, the Hougou specimen (SM01992, Figs 25–26) differs in having a relatively slender gonostylus, with three mesial megasetae on the left gonostylus and two mesial megasetae on the right.



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Figs 34–35. Wings, dorsal view. 34. *Camptochaeta subspicigera* Rudzinski, 2008. 35. *Camptochaeta tumidula* Xu & Vilkamaa, **sp. nov.**, holotype. Scale bars = 0.50 mm.

Camptochaeta tumidula **Xu & Vilkamaa, sp. nov.** (Figs 29–33, 35–36)

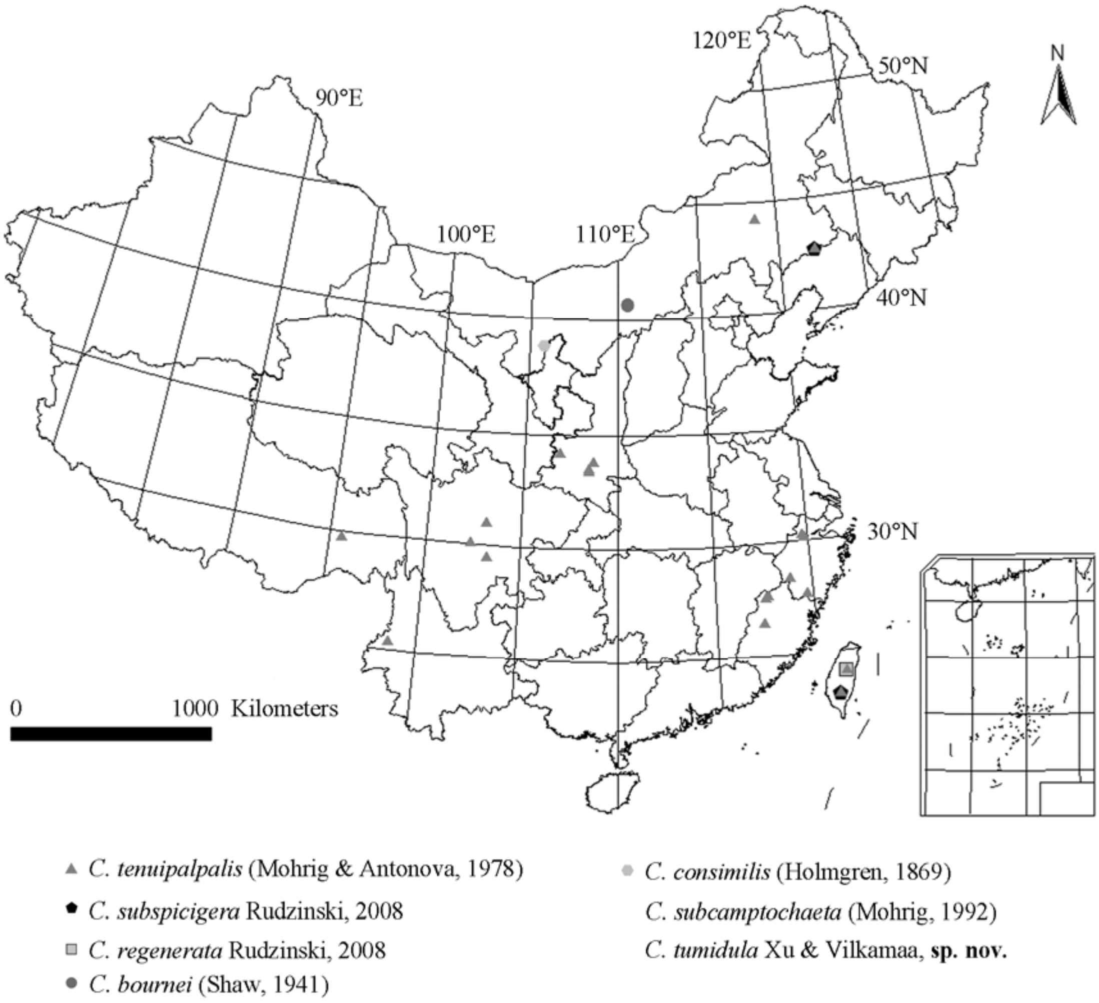
Material examined. Holotype male, China, Inner Mongolia. Alxa Left Banner, Helanshan Nature Reserve, Nansi (38°40.514'N, 105°50.253'E; elev. 2 215 m), 29 July 2013, leg. Jun Xu (SM02001). Paratypes: 4 males, same data as holotype but 29 July 2013, leg. Mei Qin (SM02004); 31 July 2013, leg. Mei Qin (SM01998); 29 July 2013, leg. Jun Xu (SM02000); 31 July 2013, leg. Jun Xu (SM02005).

Description (Male). Color. Head dark brown; antennae and thorax yellowish brown; mesonotum brown; abdomen, hypopygium, palpus and legs pale brown; wings fumose.

Head (Figs 31–32). Eye bridge with 3 rows of facets. Prefrons with 9 setae. Palpus three-segmented, basal segment with 1 seta; 2nd segment with 6–7 setae; 3rd segment with 8 setae. Length/width of 4th flagellomere: 3.24–3.52.

Thorax. Anterior pronotum with 4 setae, episternum 1 with 8 setae. Wings (Fig. 35). Wing length 2.12–2.25 mm, width/length: 0.33–0.36. c/w: 0.34–0.36. R1/R: 0.61–0.64. r-m with 5–6 setae, stM, M1 and M2 bare, CuA1 and CuA2 bare. Legs (Fig. 33). Foretibia organ in large depression with vestiture in patch. Length of spur/width of foretibia 1.22–1.26. Length of femur/length of metatarsus: foreleg 1.26–1.32. Length of metatarsus/length of tibia: foreleg 0.55, hind leg 0.50. Length of hind tibia/length of thorax 1.28.

Hypopygium (Figs 29–30). Gonocoxa longer than gonostylus. Gonostylus swollen, with a strong apical tooth, an apical megaseta arising from a large basal body in dorsal side and the other two at apex of gonostylus, two mesial megasetae close to each other at the apical third of the gonostylus. Tegmen strongly narrowed at the apical part. Intercoxal area of hypopygium densely setose. Sternite 10 with 1 seta on each half.


120°E
50°N
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1000 Kilometers
▲ *C. tenuipalpalis* (Mohrig & Antonova, 1978)
⬟ *C. subspicigera* Rudzinski, 2008
▣ *C. regenerata* Rudzinski, 2008
● *C. bournei* (Shaw, 1941)
● *C. consimilis* (Holmgren, 1869)
C. subcamptochaeta (Mohrig, 1992)
C. tumidula Xu & Vilkamaa, **sp. nov.**

Fig. 36. Geographical distribution of *Camptochaeta* from China.

Distribution. China (Inner Mongolia; Fig. 36).

Remarks. *Camptochaeta tumidula* Xu & Vilkamaa, **sp. nov.** is very similar to *C. delicata* (Lengersdorf, 1935) in having two mesial megasetae and three apical megasetae on the gonostylus. But the new species differs in having the two mesial megasetae close to each other and the basal megaseta located at about the apical third of the gonostylus, whereas the two mesial megasetae are more far apart from each other and the basal megaseta is located nearly at the middle of the gonostylus in *C. delicata*. In addition, the tegmen is quite broad in the basal half and strongly narrowed at the apical half in the new species, while it is relatively narrow and apically less strongly narrowed in *C. delicata*.

Etymology. This species is named after its slightly inflated gonostylus, from the Latin adjective *tumidus*, meaning swollen.

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References

Heller, K. 2012. IV 6.3 Familie Sciaridae. *In*: Gerecke, R., Haseke, H., Klauber, J. and Maringer, A. (eds.), Quellen, Schriften des Nationalparks Gesäuse (7). Weng im Gesäuse, pp. 189–199 and 373–381.

Hippa, H. and Vilkamaa, P. 1994. The genus *Camptochaeta* gen. n. (Diptera, Sciaridae). *Acta Zoologica Fennica*, 194: 1–85.

Komarova, L. A., Hippa, H. and Vilkamaa, P. 2007. A review of the sciarids species of the genus *Camptochaeta* Hippa et Vilkamaa, 1994 (Diptera: Sciaridae) of the Altai fauna. *Far Eastern Entomologist*, 117: 1–9.

Menzel, F. and Heller, K. 2004. Sechs Arten aus den Gattungen *Bradysia, Camptochaeta* und *Corynoptera* (Diptera: Sciaridae) nebst einigen Bemerkungen zur Nomenklatur europäischer Trauermücken. *Studia dipterologica*, 11: 335–357.

Menzel, F. and Mohrig, W. 2000. Revision der paläarktischen Trauermücken (Diptera: Sciaridae). *Studia dipterologica Supplement*, 6 (1999): 1–761.

Mohrig, W. and Eckert, R. 1992. Trauermücken aus Naturhöhlen des Harzes, Deutschland (Insecta, Diptera, Sciaridae). *Mitteilungen aus dem Zoologischen Museum in Berlin*, 68: 295–298.

Rudzinski, H. G. 2008. Beiträge zur Trauermückenfauna Taiwans. Teil V: Gattungen *Dichopygina, Camptochaeta, Corynoptera* und *Keilbachia* (Diptera Nematocera: Sciaridae). *Entomofauna*, 29: 321–360.

Shaw, F. R. 1941(1941a). Some new species of the genus *Sciara* from Canada. *Canadian Entomologist*, 73: 174–175.

Stone, A. and Laffoon, J. L. 1965. Family Sciaridae (Lycoriidae). *In*: Stone, A., Sabrosky, C.W., Wirth, W.W., Foote, R.H. and Coulson, J.R. (eds.), A catalog of the Diptera of America North of Mexico. United States Department of Agriculture, Washington, D.C. pp. 229–236.

Tuomikoski, R. 1960. Zur Kenntnis der Sciariden Finnlands. *Annales Zoologici Societatis Zoologiae Botanicae Fennicae, Vanamo,* 21(4): 1–164.

Wu, H, Chen, X-Q and Wang, Y-P 2008. Two new record species and genera of Sciaridae (Diptera) from China. *Entomotaxonomia*, 30(1): 53–56.

Vilkamaa, P., Hippa, H. and Taylor, S. J. 2011. The genus *Camptochaeta* in Nearctic caves, with the description of *C. prolixa* sp. n. (Diptera, Sciaridae). *Zookeys*, 135: 69–75.

Vilkamaa, P., Hippa, H. and Heller, K. 2013. Review of the genus *Camptochaeta* Hippa & Vilkamaa (Diptera, Sciaridae), with the description of nine new species. *Zootaxa*, 3636: 476–488.

Vilkamaa, P. 2014. Checklist of the family Sciaridae (Diptera) of Finland. *Zookeys*, 441: 151–164.